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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,446	10/22/2001	Stein A. Lundby	PA990156C1	3598
23696	7590	09/09/2005	EXAMINER	
Qualcomm Incorporated Patents Department 5775 Morehouse Drive San Diego, CA 92121-1714			NGUYEN, STEVEN H D	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,446

Applicant(s)

LUNDBY ET AL.

Examiner

Steven HD Nguyen

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 65-76 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 65-76 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/22/01.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 64-76 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-76 of U.S. Patent No. 6356528.

Patent discloses a system comprising deinterleavers, deshuffler, interleavers, shuffler, encoder, decoder, Walsh demodulating and Walsh modulating. Patent does not disclose a multiplexer or demultiplexer in the independent claims. However, a demultiplexer for demultiplexing incoming signal into a plurality of signal and multiplexer for multiplexing a plurality of incoming signal are well known and expected in the art at the time of invention was made. Therefore, it would have been of obvious to one of ordinary skill in the art at the time of invention was made to implement a multiplexer and demultiplexer into the Patent in order to improve transmission time between the devices.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 65-70 rejected under 35 U.S.C. 102(e) as being anticipated by Chen (USP 6304581).

Regarding claims 65 and 68, Chen discloses an apparatus for a communication system, comprising demultiplexer (Provisional and Patent, Fig 1, DEMUX) for distributing transmit data symbols into a plurality streams of data symbols; a plurality of interleavers (Provisional and Patent, Fig 1, Interleavers) for interleaving said plurality streams of data symbols; shuffler (Provisional and Patent, Fig 1, Ref End-round shift) for cyclically rotating output of at least one of said plurality of interleavers.

Regarding claims 66 and 69, Chen discloses a transmission system for Walsh covering and modulating outputs of said plurality of interleavers, excluding said least one of said plurality of interleavers, and said shuffler for transmission of said data symbols over at least a plurality of carrier frequencies (Provisional, Fig 1, Sec 1. State the problems solved by the invention and Sec 1. Introduction and Patent, Fig 1 and Col. 1, lines 50 to col. 2, lines 30).

Regarding claims 67 and 70, Chen discloses an apparatus for a communication system, comprising an encoder for encoding information data bit for producing the transmit data symbols (Provisional and Patent, Fig 1, Channel Encoder).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 71-76 rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (USP 6304581).

Chen discloses a transmitter comprising a multiplexer for demultiplexing into two streams wherein the first stream is interleaved by the first interleaver and the second stream is interleaved by the second interleaver which output the interleaved second stream into a end around shift (Provisional and Patent, Fig 1) wherein these three components is OTD interleaver and the first and second stream are covered by a different Walsh code and modulating by different modulator (Provisional and Patent, Fig 1, Ref QPSK, Sec 1. introduction and Sec 1, States the problems). Chen does not disclose a detail of a receiver for recovering the transmitted signal. However, Chen suggests that a receiver must perform the reverse procedure in order to

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recover the signal that includes a decoder (Sec 2, Describe of invention, the last Paragraph; Sec 1. introduction and Last paragraph of Sec 4. implementation complexity) after deinterleaving the received signals. Since, a method for performing reverse procedure to recover the transmitting signal based on a transmission procedure is well known and expected in the art at the time of invention was made. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to perform a reverse procedure based on a procedure of transmitter as disclosed in Fig 1 of Chen in order to obtain a receiver comprising decoder, multiplexer, deinterleavers and a end-round shift, demodulating and Walsh discovering. The motivation would have been to improve diversity process by allowing a decoder to process a group of symbols that have faded independently.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Reeds III (USP 5727064) discloses a receiver which comprises a method for performing a reverse procedure from a transmission procedure of the transmitter in order to recover the transmitted signals.

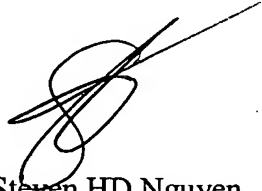
Kim (USP 6563807) discloses a receiver which comprises a method for performing a reverse procedure from a transmission procedure of the transmitter in order to recover the transmitted signals.

Tsujimoto (USP 5636242) discloses a receiver which comprises a method for performing a reverse procedure from a transmission procedure of the transmitter in order to recover the transmitted signals.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven HD Nguyen whose telephone number is (571) 272-3159. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steven HD Nguyen
Primary Examiner
Art Unit 2665
9/3/05